



Manganese FL

3-0-0

Foliar Nutritional Liquid Flowable

A formulated product for the treatment of manganese deficiency by foliar application.

GUARANTEED ANALYSIS

Total Nitrogen (N)	3.00%
3.00% Urea Nitrogen	
Manganese (Mn)	27.40%
0.00% Water Soluble Manganese (Mn)	

Derived from urea and manganese carbonate

Chlorine (Cl), Maximum

Nutrient content per gallon: 4 lb. 3 oz. Manganese (Mn)

KEEP OUT OF REACH OF CHILDREN

WARNING

- May be harmful if swallowed
- May be harmful in contact with skin
- Causes eye irritation
- Causes mild skin irritation
- May be harmful if inhaled

WT. PER GAL.: 15.22 lbs (6.90 kg)

YSN 041315/0815

NET CONTENTS: □ 2.5 gals (9.46 L)

□ 250 gals (946.35 L)

Information about the components of this lot of fertilizer may be obtained by writing to Helena Chemical Company, 225 Schilling Boulevard, Suite 300, Collierville, TN 38017 and giving the lot number which is found on the container.

Information regarding the contents and levels of metals in this product is available on the Internet at <http://www.aapfc.org/metals.htm>

Contents Made In Great Britain

F224

MANUFACTURED FOR
HELENA CHEMICAL COMPANY
225 SCHILLING BOULEVARD
COLLIERVILLE, TN 38017
901-761-0050

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING

BEFORE USING THIS PRODUCT, READ ALL PRECAUTIONS, DIRECTIONS FOR USE, CONDITIONS OF SALE-LIMITED WARRANTY AND LIMITATIONS OF LIABILITY AND REMEDIES.

May be harmful if swallowed. May be harmful in contact with skin. Causes eye irritation. Causes mild skin irritation. May be harmful if inhaled. Keep product locked up and out of the reach of children. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or smoking tobacco. Remove and wash contaminated clothing before reuse. Do not take internally. Avoid contact with or inhalation of spray application mist if present. Do not apply this product in such a manner as to directly expose workers or other persons. If product is being mixed with pesticides and/or spray adjuvants, follow all precautionary statements on the accompanying product(s) labeling. Not for human or animal consumption.

Personal Protective Equipment (PPE): Wear protective eyewear (goggles or face shield), chemical-resistant gloves, long-sleeved shirt and long pants, and shoes plus socks when using this product. Take off any contaminated clothing and wash before reuse.

Disclaimer: Always refer to the label on the product before using Helena or any other product.

FIRST AID	
IF IN EYES:	<ul style="list-style-type: none"> • Rinse cautiously with water for several minutes. • Remove contact lenses, if present and easy to do. Continue rinsing. • Call a poison control center or doctor for treatment advice.
IF INHALED:	<ul style="list-style-type: none"> • Move person to fresh air and keep at rest in a position comfortable for breathing if they feel unwell. • If not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a POISON CENTER or doctor for treatment advice.
IF ON SKIN OR HAIR:	<ul style="list-style-type: none"> • Take off immediately all contaminated clothing. Rinse skin with water or shower. • Get medical attention if irritation develops or persists. • Wash contaminated clothing before reuse.
IF SWALLOWED:	<ul style="list-style-type: none"> • Call a POISON CENTER or doctor immediately. • Rinse mouth. Do NOT induce vomiting. • Do not give anything by mouth to an unconscious person. • Immediately call a POISON CENTER or doctor.
If there is contact made with the spray solution containing pesticides and/or spray adjuvants, follow the "Statement of Practical Treatment/First Aid" on the product(s) labeling.	

HOT LINE NUMBER: Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.

STORAGE AND DISPOSAL
Keep in a cool, dry chemical store, out of reach of children and livestock. Protect from frost. Keep container tightly closed, do not allow water to be introduced to the contents of this container. Store at temperatures above 32°F. Do not contaminate water sources by cleaning of equipment or disposal of spray waste. Dispose of empty containers by triple rinsing with detergent solution or puncture and discard empty containers in a landfill in accordance with current local, State and Federal regulations.

GENERAL INFORMATION
MANGANESE FL is a formulated treatment for manganese deficiencies in a wide range of crops. MANGANESE FL may be impregnated onto dry fertilizer granules. This product is recommended for use as a supplement to a well-balanced fertilizer program only. It is not intended nor implied to be a substitute for sound soil fertilization and good conventional cultural practices. Thorough coverage of foliage is necessary for best results.
For additional information on product or programs, or if you are unfamiliar with any of the application methods, contact your local Helena representative or authorized Helena dealer.
Avoid application under extremes of climate, e.g., rapid drying conditions, extremely slow drying conditions, frost, rain, or when frost or rain are anticipated.

DIRECTIONS FOR USE
Shake the container thoroughly before use.
FERTILIZER IMPREGNATION
May be coated onto dry fertilizer granules. WARNING: This product must not be used with straight ammonium nitrate fertilizer, or any other fertilizer product classified as an oxidizing agent – Class 5.1 material. For further advice, please consult your Helena representative.

FOLIAR DOSE RATE AND TIMINGS
Alfalfa: 1 pint/acre when sufficient leaf cover to intercept spray and at flower bud formation. Water rate: 3 to 20 gallons/acre.
Apples: 1 pint/acre prior to flowering in the case of severe deficiency. Otherwise commence at petal fall and repeat 10 to 14 days later. On russet sensitive varieties delay applications until 6 weeks after petal fall. Water rate: 50 to 100 gallons/acre. For improved green background color (note specified varieties only): 6 applications of 0.25 pint/acre from June drop to around 4 weeks pre-harvest. Also, 1 pint/acre after harvest before leaf senescence. Water rate: 30 gallons/acre. Applies to varieties: Jonagold, Elstar, Cox, Golden Delicious and Granny Smith.
Asparagus: 1 to 2 pints/acre when there is sufficient leaf area to intercept spray and prior to senescence of ferns. Water rate: 3 to 20 gallons/acre.
Beans: 1 pint/acre at 4- to 6-leaf stage (for deficiency/yield) and 1 pint/acre at start of flowering and end of flowering (for quality). Water rate: 3 to 20 gallons/acre.
Blackcurrants: 1 to 3 pints/acre at start of flowering. Water rate: 25 gallons/acre. For aircraft sprayers, apply one and a quarter pints per acre at start of flowering. Water rate: 5 gallons/acre.
Canola: 1 to 3 pints/acre at onset of stem extension. For moderate deficiency, 3 pints/acre at 4- to 6-leaf stage and at onset of stem extension. An extra application can be made 10 to 14 days later for severe deficiency. Avoid flowering. Water rate: 25

gallons/acre. For aircraft sprayers, apply one and a quarter pints per acre at onset of stem extension. For moderate deficiency, one and a quarter pints per acre at 4- to 6-leaf stage and at onset of stem extension. An extra application can be made 10 to 14 days later for severe deficiency. Avoid flowering. Water rate: 5 gallons/acre.

Carrots (field grown): 1 to 3 pints/acre when crop is 6 inches tall. For moderate to severe deficiency repeat applications at 10- to 14-day intervals. Water rate: 25 gallons/acre. For aircraft sprayers, apply one and a quarter pints per acre when crop is 6 inches tall. For moderate to severe deficiency repeat applications at 10- to 14-day intervals. Water rate: 5 gallons/acre.

Celery (field grown): 1 pint/acre at the 4- to 6-leaf stage. Repeat 10 to 14 days later if necessary. Water rate: 3 to 20 gallons/acre.

Cereals (Barley, Oats, Wheat): 1 to 3 pints/acre from 2-leaf stage to first node detectable (Zadok's G.S. 12 to 31). For moderate to severe deficiency repeat applications at 10- to 14-day intervals. Water rate: 25 gallons/acre. For aircraft sprayers, apply one and a quarter pints per acre from 4 true leaves. For moderate to severe deficiency, repeat applications should be made at the above rate at 10- to 14-day intervals. Water rate: 5 gallons/acre.

Citrus: ½ to 1 quart/acre pre-bloom and during autumn flushes. Water rate: 100 gallons/acre.

Cole Crops (Broccoli, Brussels Sprouts, Cabbage, Calabrese, Cauliflower): 1 to 3 pints/acre from 4 true leaves. For moderate to severe deficiency, repeat applications should be made at the above rate at 10- to 14-day intervals. Water rate: 25 gallons/acre. For aircraft sprayers, apply one and a quarter pints per acre from 4 true leaves. For moderate to severe deficiency, repeat applications should be made at the above rate at 10- to 14-day intervals. Water rate: 5 gallons per acre.

Conifers: 2 applications of 1 pint/acre once there is new season leaf production and again in early autumn. Water rate: 50 to 100 gallons/acre.

Corn: 1 to 3 pints/acre at 4- to 6-leaf stage. For moderate to severe deficiency repeat applications at 10- to 14-day intervals. Water rate: 25 gallons/acre. For aircraft sprayers, apply one and a quarter pints per acre at 4- to 8-leaf stage. For moderate to severe deficiency repeat applications at 10- to 14-day intervals. Water rate: 5 gallons/acre.

Cotton: 1 pint/acre applied 21 to 28 days after emergence and 10 to 14 days later. Water rate: 3 to 20 gallons/acre.

Curcubits (field grown): 1 pint/acre applied from the 4- to 6-leaf stage onwards. Repeat applications may be necessary for moderate to severe deficiency with a 10- to 14-day interval. Water rate: 3 to 50 gallons/acre.

Eucalyptus: 1 to 2 pints/acre applied during spring or autumn flush. Water rate: 2 gallons/acre minimum.

Ginseng: 1 pint/acre applied once new season growth is well underway. Repeat applications at 10- to 14-day intervals may be necessary for moderate to severe deficiency. Water rate: 50 gallons/acre.

Grapevines: 1 pint/acre at flower buds visible, flower buds separated and at fruit set. Water rate: 50 to 100 gallons/acre.

Groundnuts: 1 pint/acre applied at the 6-leaf stage and again 10 to 14 days later. Water rate: 3 to 20 gallons/acre.

Leeks: 1 to 3 pints/acre two weeks after transplanting, or in the case of direct sown crops, when the crop is 6 inches tall. Repeat applications may be necessary at 10- to 14-day intervals. Water rate: 25 gallons/acre. For aircraft sprayers, apply one and a quarter pints per acre two weeks after transplanting, or in the case of direct sown crops, when the crop is 6 inches tall. Repeat applications may be necessary at 10- to 14-day intervals. Water rate: 5 gallons/acre.

Lettuce (field grown): 1 to 3 pints/acre 10 to 14 days after transplanting or emergence. For moderate to severe deficiency repeat applications at 10- to 14-day intervals. Note: Final application to be made at least one month before harvest. Water rate: 25 gallons/acre. For aircraft sprayers, apply one and a quarter pints per acre 10 to 14 days after transplanting or emergence. For moderate to severe deficiency repeat applications at 10- to 14-day intervals. Note: Final application to be made at least one month before harvest. Water rate: 5 gallons/acre.

Linseed: 1 pint/acre when crop is 6 inches tall. For moderate to severe deficiency repeat applications at 10- to 14-day intervals. Water rate: 3 to 20 gallons/acre.

Melons (field grown): 1 pint/acre applied at the 4- to 6-leaf stage. In cases of moderate or severe deficiency repeat application after a 10- to 14-day interval. Water rate: 5 to 20 gallons/acre.

Nursery stock/Ornamentals: 5 pints in 100 gallons of water (0.625% v/v) as soon as there is sufficient leaf area to intercept a spray. Repeat at 10- to 14-day intervals as necessary. Avoid application during flowering. Spray maximum of three applications per crop per annum. Note: Do not apply within one month of picking/marketing. Maximum water rate: 10 to 20 gallons/acre.

Nuts (deciduous): 1 pint/acre at bud break in spring. Repeat after 15 days if necessary. Water rate: 50 gallons/acre.

Onions: 1 to 3 pints/acre two weeks after transplanting, or in the case of direct sown crops, when the crop is 6 inches tall. Repeat applications at 10- to 14-day intervals. Water rate: 25 gallons/acre. For aircraft sprayers, apply one and a quarter pints per

Disclaimer: Always refer to the label on the product before using Helena or any other product.

acre two weeks after transplanting, or in the case of direct-sown crops, when the crop is 6 inches tall. Repeat applications at 10- to 14-day intervals. Water rate: 5 gallons/acre.

Peanuts: 8 to 16 ounces/acre applied at the 4 to 6 leaf stage and again 10 to 14 days later. Water rate: 3 to 20 gallons/acre.

Pears: 1 pint/acre prior to flowering in the case of severe deficiency. Otherwise commence at petal fall and repeat 10 to 14 days later. On russet sensitive varieties delay applications until 6 weeks after petal fall. Water rate: 50 to 100 gallons/acre.

Peas: 1 to 3 pints/acre at 4- to 6-leaf stage (for deficiency/yield) and 3 pints/acre at start of flowering and end of flowering (for Marsh Spot). Water rate: 25 gallons/acre. For aircraft sprayers, apply one and a quarter pints per acre at 4- to 6-leaf stage (for deficiency/yield) and one and a quarter pints at start of flowering and end of flowering (for Marsh Spot). Water rate: 5 gallons/acre.

Potatoes: 1 to 3 pints/acre at one week after 100% emergence and following petiole analysis during tuber bulking. For moderate to severe deficiency, repeat applications at 10- to 14-day intervals. Water rate: 25 gallons/acre. For aircraft sprayers, apply one and a quarter pints per acre at one week after 100% emergence and following petiole analysis during tuber bulking. For moderate to severe deficiency, repeat applications at 10- to 14-day intervals. Water rate: 5 gallons/acre.

Raspberries: 1 to 3 pints/acre at start of flowering. Water rate: 25 gallons/acre. For aircraft sprayers, apply one and quarter pints per acre at start of flowering. Water rate: 5 gallons/acre.

Rice: 1 pint/acre applied at start of tillering. Water rate: 3 to 20 gallons/acre.

Sorghum: 1 to 2 pints/acre at 4- to 8-leaf stage. For moderate to severe deficiency repeat applications at 10- to 14-day intervals. Water rate: 3 to 20 gallons/acre.

Soybeans: 1 to 3 pints/acre when the crop is 2 to 6 inches tall. Water rate: 25 gallons/acre. For aircraft sprayers, apply one and a quarter pints per acre when the crop is 2 to 6 inches tall. Water rate: 5 gallons/acre.

Spinach: ½ pint/acre at the 4- to 6-leaf stage. Water rate: 3 to 20 gallons/acre.

Stone Fruit (Apricots, Cherries, Nectarines, Peaches, Plums): 1 pint/acre applied from fruit set. Repeat if necessary at 10- to 14-day intervals. Water rate: 50 to 100 gallons/acre.

Strawberries (field grown): 1 to 3 pints/acre at green bud. Repeat if needed at 10- to 14-day intervals. Water Rate: 25 gallons/acre. For aircraft sprayers, apply one and a quarter pints per acre at green bud. Repeat if needed at 10- to 14-day intervals. Water rate: 5 gallons/acre.

Sugar Beets: 1 to 3 pints/acre from 4- to 6-leaf stage. For moderate to severe deficiency, applications may be repeated at 10- to 14-day intervals. Water rate: 25 gallons/acre. For aircraft sprayers, apply one and a quarter pints per acre from 4- to 6-leaf stage. For moderate to severe deficiency, applications may be repeated at 10- to 14-day intervals. Water rate: 5 gallons/acre.

Sugar Cane: 1 pint/acre when plants are 3 to 4 feet tall. Water rate: 3 to 20 gallons/acre.

Sunflowers: 1 pint/acre at 4 to 8 pairs of leaves. For moderate to severe deficiency, repeat 10 to 14 days later. Water rate: 3 to 20 gallons/acre.

Sweet Potatoes: 1 pint/acre one week after 100% emergence or transplanting. Also, apply at the same rate following recommendation from analysis. Water rate: 20 gallons/acre.

Tobacco: 1 to 3 pints/acre applied two to three weeks after transplanting (3- to 4-leaf stage). Repeat 10 days later if necessary. Water rate: 25 gallons/acre. For aircraft sprayers, apply one and a quarter pints per acre applied 2 to 3 weeks after transplanting (3- to 4-leaf stage). Repeat 10 days later if necessary. Water rate: 5 gallons/acre.

Tomatoes (field grown): 0.5 to 1 pint/acre at the 4- to 6-leaf stage and repeated at 10- to 14-day intervals if required by moderate to severe deficiency. Water rate: 3 to 50 gallons/acre.

Turf: 1 fl. oz./1,000 sq. ft. as soon as growth commences in spring and/or following identification of need by analysis. Repeat sprays at 10- to 14-day intervals as necessary. Water rate: 0.5 gallon/1,000 sq. ft.

DO NOT APPLY NEAR WATER, STORM DRAINS, OR DRAINAGE DITCHES. DO NOT APPLY IF HEAVY RAIN IS EXPECTED. APPLY THIS PRODUCT ONLY TO YOUR LAWN/GARDEN.

TANK MIXING/CO-APPLICATION

Read ALL labels carefully and adhere strictly to the instructions for use and advice regarding whether or not product(s) should be co-applied. Many variables can influence the performance of co-applied products and therefore co-application is entirely at the risk of the end-user. It is strongly recommended that a limited application is made initially when using unfamiliar product mixes. Before co-application of products you, or your advisor, must visit www.tankmix.com/elemax for important information or do a jar test.

**CONDITIONS OF SALE–LIMITED WARRANTY
AND LIMITATIONS OF LIABILITY AND REMEDIES**

Read the Conditions of Sale–Warranty and Limitations of Liability and Remedies before using this product. If the terms are not acceptable, return the product, unopened, and the full purchase price will be refunded.

This label is believed to be reliable and must be followed carefully. Injury to the crop to which the product is applied may result from the occurrence of extraordinary or unusual weather conditions or the failure to follow the label directions or good application practices, all of which are beyond the control of Helena Chemical Company (the "Company") or seller. In addition, failure to follow label directions may cause injury to crops, animals, man or the environment. The Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purpose referred to subject to the factors noted above which are beyond the control of the Company. The Company makes no other warranties or representations of any kind, express or implied, concerning the product, including no implied warranty of merchantability or fitness for any particular purpose, and no such warranty shall be implied by law.

The exclusive remedy against the Company for any cause of action relating to the handling or use of this product shall be limited to, at Helena Chemical Company's election, one of the following:

1. Refund of the purchase price paid by buyer or user for product bought, or
2. Replacement of the product used

To the extent allowed by law, the Company shall not be liable and any and all claims against the Company are waived for special, indirect, incidental, or consequential damages or expense of any nature, including, but not limited to, loss of profits or income. The Company and the seller offer this product and the buyer and user accept it, subject to the foregoing conditions of sale and limitation of warranty, liability and remedies.

© Copyright Helena Holding Company, 2015

ELE-MAX® and PRECISION NUTRITION® are registered trademarks of Helena Holding Company.